TIMBERMATIC

300 700 900

CUT-TO-LENGTH SYSTEM

MEASURING, CONTROL AND COMMUNICATION SYSTEM

JOHN DEERE

NEW POWER;
MORE INTELLIGENCE AND PRODUCTIVITY.

Modern harvesting requires accuracy, speed and power. Requisites include extraordinarily accurate measuring instruments, intelligent control systems, fast information management and wireless data transfer. The Timbermatic system has it all. Timbermatic makes the machine as productive as it can be in the hands of the operator.

CUT-TO-LENGTH SYSTEM	
HARVESTERS	FORWARDERS

For All Forest Machines
The Timbermatic system is available for three applications: Timbermatic 300 for harvesters, Timbermatic 700 for forwarders and Timbermatic 900 for slash bundlers.

User-friendliness Is the Key
The experiences of machine operators have been taken into consideration when designing Timbermatic. The control menu of the Windows® based system only has two levels, which makes it easy, fast and efficient to use. The information is displayed to the operator on a large, flat colour display in a clear number or picture format. The operator can edit the contents of the display to select which adjustments and Timbermatic applications appear at each work stage.

Efficient Office in the Middle of the Forest
Thanks to data transfer and versatile applications Timbermatic turns the cab of the harvester into a modern office in the middle of the forest – complete with e-mail, CD ROM, memory cards and a colour printer.

Productivity Throughout the World
A GPS component, which makes it possible to register the location of produced timber and the routes taken as well as saving them automatically in the production and stem profile files, is included in the Timbermatic 300 system for harvesters as standard. All that is required in addition is a GPS aerial.

The TimberNavi map system brings you a WGS84 coordinate system (UTM zones 1-60 N/S), which works everywhere in the world. This information on production, location and routes can be transferred to the Timbermatic 700 system designed for forwarders and thus be used to optimise forwarding.

All Timbermatic and TMC systems now feature a display that provides reminders of scheduled maintenance services.

TIMBERMATIC 300. FAST DECISIONS AND FL

The harvester operator appreciates that the machine is in reliable working order fast at the beginning of a job. Thanks to the self-learning Timbermatic 300 system, the adjustments of the basic machine and the harvester head can be made effortlessly from the cab. During work, the system supports the operator in decision-making, which makes working faster, thus leaving more time for quality control.

Effective Tool
Timbermatic 300 is a PC-based system, which integrates the control of the harvester head, the measuring of timber, bucking and the control system of the basic machine and the harvester head into an effective harvesting tool.

Accurate Control of the Harvester Head
Timbermatic 300 includes a highly automated control for the harvester head, which will adjust the feed speed and the pressure of the saw, the delimbing knives and the feed rollers on the basis of the stem diameter. Fast, accurate, anti-slip cutting to size increases productivity. Timbermatic divides the stem into the most valuable pieces on the basis of extraordinarily accurate measuring capabilities.

Starting a Site Effortlessly
Thanks to the system, the operator can now start a new site even faster than before. Switching between the run mode and the setting mode is quick. A couple of clicks of the mouse in the setting mode enable the operator to open up a new site. The bucking instructions that have been supplied by the forest company can be further modified with the help of a bucking control program included in Timbermatic. The operator will then activate the site and the work can begin.

Accurate, Fast Cutting to Size
The first stem is already in position in the grip of the harvester head. The self-learning feed control automatically adjusts the feed speed as well as the pressure of the feed rollers and the delimbing knives. The anti-slip feature ensures that the feed rollers do not slip along the stem. The stem is then stopped precisely in the sawing window. As feeding back and forth is avoided, time is saved, productivity is increased and an increasingly accurate measuring result is achieved. Timber is processed faster than ever.

UENT WORK.

The extraordinarily accurate measurement received from the harvester head is the basis for the Timbermatic in dividing the stem either in terms of value bucking or value and distribution bucking or using a limitation matrix. The system formulates an estimate on the diameter of the entire stem, from top to bottom. The new estimate calculation model provides increasingly accurate results. As work progresses, the system quickly learns more about the timber in the stand in progress and can constantly make itself more and more accurate. The estimate model produced for the previous stand can also be easily used in the next stand, if the conditions are similar. This enables accurate measurements from the very first stems onwards.

The Timbermatic 300 system features so-called gentle stem handling as standard. This feature delimbs the stem gently using the slower acceleration of the harvester head, lower feed speed and lower pressure of the delimbing knives and the feed rollers. This way the damage caused by the delimbing knives and the feed rollers in the valuable surface timber of the butt log – and other logs if desired – is avoided.

Easy Calibration

Calibration of the length and diameter is quick and easy with the help of the instructions and graphics provided by the system. Inside the cab, the Timbermatic-compatible electronic callipers are set into a re-charge and data transfer docking station, which has direct access to the Timbermatic 300 system. The system stores the measurements taken with the callipers and prepares the necessary comparison and monitoring data for data transfer. Modern calibration based on random sampling helps to achieve increasingly high accuracy as work progresses. Calibration helps to improve the quality of the timber produced by the machine and increases productivity. In addition, cutting naturally corresponds to the objective more accurately.

All Information in Front of Your Eyes

As work progresses, the operator can display all the required information on the screen. As the stem is being cut, the two most recent logs are always displayed, as is an estimate of the next two logs. At one glance, the operator can see the lengths, diameters and the assortments.
In addition, the screen can be made to display the temperature of the engine, the running speed, the amount of fuel and the charge voltage, for example; the time and the external temperature may also be useful. Once the operator has selected the GPS map application, he can see his real-time position on the screen, as well as the site borders, storage locations, special geographical features, the location of produced timber and routes. Timbermatic and the GPS map application work together seamlessly: as the stem is being cut, the operator can see the Timbermatic run mode and when the machine is on the move the GPS map application will be displayed.

Change of Scenery

Once the site has been harvested and a new site waits, the change to a new site only takes a blink of an eye. In practice, the PC memory of Timbermatic has space for an unlimited number of sites as well as the personal settings of six different operators. The scenery changes while the work continues seamlessly.

EFFICIENT OFFICE IN THE MIDDLE OF THE FOREST.

Timbermatic 300, which utilises data transfer, the Internet and email, turns the forest machine into a mobile, well-equipped office that moves between the trees. Thanks to the email and the memory card of Timbermatic 300, the harvester operator can stay in touch with the forest company and the forest machine entrepreneur.

Excellent Work Ergonomics
The large and flat colour screen is installed in such a way that it easily enters the operator's field of vision at a quick glance. The keyboard slides out from underneath the display when required and selections are made using a touch pad. The menu can be navigated using the keyboard as well, or using the keypad or the control levers of the boom depending on what the operator is used to.

Connections to the Entire World
When using the Timbermatic 300 system, the harvester operator is at the centre of the operation, not isolated in the middle of the forest. Timbermatic works as a two-way system when communicating with the outside world. The e-mail enables the operator to receive and send production information, machine settings and harvesting instructions. The CD drive, USB and serial ports as well as the other versatile connections enable application update and installation and the use of GPS positioning technology. Data transfer is made possible using a GSM or GPRS connection, and with the aid of a satellite telephone, if necessary, or simply with the memory card. There is hardly time to surf the Internet during working hours but the option is still there! In the memo section of the e-mail application, the operator can record messages for the next operator. The message will pop up on the screen as the next operator begins work.

Clear Printouts, Versatile Information Management
The versatile data production of the Timbermatic 300 system

is supported by a colour printer positioned in the cab, which can be used to print out production reports, maps, work site instructions, work and repair follow up data, calibration history, stem data, log tables or even the parameters of the machine in A4 size. Each site can be divided into four blocks and each of these can be saved or printed separately.

Uptime and Costs Under Control

The system incorporates versatile reports on the events taking place during the operation of the machine and these can be used for monitoring uptime, productivity and costs (Work and Repair Statistics, WRS) and transferred to the office as files or printed out on paper, if necessary. The system enables the efficient management of information relating to machine chains and information can be managed separately for each harvesting application, at set intervals and in relation to individual machines.

Help is Always Available

The Timbermatic 300 system incorporates a user-friendly Help function, which includes the user manual and the electric and hydraulic diagrams. Diagnostics enable testing for the outputs and sensors and event and error logs can be printed out. Knowledgeable maintenance organisation provides additional assistance and a separate electronic spare parts booklet, which is available on CD, speeds up maintenance operations.

SilviA – Accurate Bucking

Timbermatic 300 also incorporates the SilviA application for controlling bucking operations. The application makes controlling bucking instructions (apt files) fast and simple. A File Overview function has been added as a new feature, enabling modification of bucking instructions via a single, straightforward menu.

The new hydraulics system enables up to 28 MPa working pressure for feeding in the harvester heads. The increased working pressure and the new, extremely accurate feed control based on the Timbermatic 300 provide power and speed for delimbing.

TIMBERMATIC 700.
CONTROL AND COMMUNICATION SYSTEM FOR MODERN FORWARDERS.

Timbermatic 700 is a computer-based system, which combines the TMC control system of the basic machine and the boom, work and repair follow up system, positioning, e-mail, data transfer, front/back camera, Active Load Space (ALS) and the weight scale system into an efficient tool for the forwarder operator.

Intelligent Weight Scale System

Using the weight scale system enables recording and reporting of the production of the forwarder similarly to that of the harvester. The forwarder is fitted with a grapple weight scale system, which enables load weight measurement.

The system saves the weight in terms of different assortments and, when using density factors per assortment, solid volume as well. In addition to these, a production file (prd file) can be saved in relation to each individual site, containing the quantity of loads and mass per load.

A new feature is the dynamic calibration of the scale system, which makes it possible to ensure the accuracy of the measurements even faster than before. All seven operator settings can be calibrated, which enables the minimisation of inaccuracies resulting from the differences between operators. The speed of calibration and the improved measuring accuracy increase the productivity of the machine and make work smoother.

Timbermatic 700 is a control system designed for modern forwarders, which incorporates many of the same advanced features as the Timbermatic 300 system.

Efficient Monitoring of Operation and Costs

Information on the average consumption of fuel, fuel consumption and driving distance per load and the total driving distance is collected for the purposes of monitoring operation and costs.

The beginnings and ends of shifts are recorded for monitoring operation. In addition, a reason for an operation shutdown, such as trailer transportation, can be entered manually for work and repair monitoring. The operator is able to see the status of the shift: completed loads and information on the basis of tree species and assortments with the help of the weight scale system. In addition, the technical uptime of the machine and other key indicators of utilisation can be viewed.

E-mail and Troubleshooting

Similarly to Timbermatic 300, the Timbermatic 700 system features data transfer and troubleshooting based on diagnostics. In the memo section of the e-mail application, the operator can record messages for the next operator. The message will pop up on the screen as the next operator begins work.

Camera View Saves Trouble

The Timbermatic 700 display also enables monitoring of the picture transmitted by the front/back camera, where the run display and the camera display work together seamlessly.

Important Help Applications

As with the harvester, forwarders may also benefit from a GPS map program, such as the TimberNavi application, in assistance of the Timbermatic system. The menu for External Applications can be complemented with installations of Word, Acrobat Reader and Excel.

TIMBERMATIC 900.
NEW POWER AND PRODUCTIVITY FOR HANDLING SLASH.

Timbermatic 900 is a control system designed for slash bundlers, which incorporates all the same basic features as the systems for harvesters and forwarders. Timbermatic 900 integrates the TMC control system, front/back camera, work and repair follow up system, positioning, e-mail and printing functions into an efficient tool for the operator.

A Lot of Information on Bundling
The system enables the setting of default diameters and length for a bale as well as the tree species and assortments in progress. In the run mode, Timbermatic 900 displays to the operator the number of created bales in the site, TMC icons and the information field, outside temperature and the time.

The felling site display indicates the status of the active site; identification data for the site in question, individual bales and the volume per block, tree species and assortment. The system also indicates the average consumption of fuel, average fuel consumption per bale, the total driving distance and the driving distance per bale.

A Look into the Camera
The Timbermatic 900 display also enables the operator to monitor the picture transmitted by the front/back camera. The run display and the camera display work together seamlessly and automatically.

Accurate Monitoring of Operation
The beginnings and ends of shifts are recorded for monitoring operation. In addition, a reason for an operation shutdown, such as trailer transportation, can be entered manually for work and repair monitoring. The operator is able to see the status of the shift: completed bales and the volume on the basis of tree species and assortments. In addition, the technical uptime and key indicators of usability can be viewed.

In the memo section of the e-mail application, the operator can record messages for the next operator. The message will pop up on the screen as the next operator begins work.

A GPS positioning system, such as TimberNavi, can be used in conjunction with Timbermatic 900 as well.

TMC.
THE BEST CONTROL SYSTEM FOR BASIC MACHINES AND LOADERS IN THE MARKET.

TMC (Total Machine Control) is a control system for the basic machine, which enables the control and adjustment of the basic machine and the boom of the harvester, the forwarder or the slash bundler in a centralised manner via Timbermatic or via the personal TMC screen.

All Down to TMC
TMC functions as the basis for the control of the basic machine and the boom in the Timbermatic 300, 700 and 900 systems. TMC is also available as a separate control system for forwarders and slash bundlers.

When the Timbermatic 300 system is switched on, the TMC also starts up, and the same is true in reverse. When the operator changes, the altered information is automatically updated in both systems.

Information on the Engine and Machine Settings
The maintenance window of the TMC provides information on the engine and the general settings of the machine. TMC produces information for the Timbermatic system on

PRODUCTIVITY IS NOT JUST **DOWN TO IRON.**

the amount of fuel, fuel consumption, temperature of the engine cooling water and hydraulic oil, battery charge voltage and various alarms. The same source also provides information on the engine rotation speed, driving speed and the hours of operation of the machine.

Accurate Operator-specific Settings

The TMC enables the machine to be adjusted operator-specifically to suit the operating method and speed of each user. The TMC enables gentle and accurate movements of the boom and an even power transmission.

Making detailed adjustments to the settings of control levers and pedals is easy and they can easily be calibrated using the TMC. Personal settings of seven individual operators can be pre-programmed into the memory of the TMC. All boom movements can be controlled separately, including the minimum and maximum speeds as well as acceleration and deceleration to both directions.

Clear and Simple

The simple menu structure and clear symbols facilitate the use and monitoring of the TMC system settings.

YOU CAN CONTROL THE ENTIRE LOGISTIC CHAIN OF WOOD PROCUREMENT **WITH THE HELP OF TIMBERJACK TOOLS.**

The harvester incorporates:
- Timbermatic 300
- TMC
- TimberNavi

The harvester transmits information to the forwarder concerning the volume and location of timber.

The forwarder incorporates:
- Timbermatic 700
- TMC
- TimberNavi

All machine operators communicate with each other via email.

The slash bundler incorporates:
- Timbermatic 900
- TMC
- TimberNavi

The harvester operator sends production information to the forest company and the forest machine entrepreneur.

The forwarder operator sends information on forwarded volume of timber and storage location to the forest company and the forest machine entrepreneur.

The slash bundler operator sends production information to the forest company and the forest machine entrepreneur.

The harvester operator can send stand-specific work and repair data monitoring information to the forest machine entrepreneur.

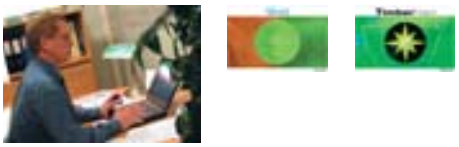
Data can be transferred wirelessly via a GSM or GPRS connection, a satellite telephone or a WLAN connection.

Alternatively, various saving methods can be used for data transfer - CDs or CompactFlash memory cards.

The forest company sends harvesting instructions to the harvesters, forwarders and slash bundlers.

The forest machine entrepreneur plans and analyses production, monitors income and expenses and machine settings.

Available tools: TimberOffice software package (TimberNavi, SilviA, TimberCenter, TimberMonitor, TimberCalc), Timbermatic 300 PC Simulator.



Harvesting instructions are created in the forest company, which also monitors the volume and quality of the produced timber.

Available tools: TimberOffice software package (TimberNavi, SilviA, TimberCenter). In addition, special applications of the forest company.

When you use the TimberOffice software package together with the Timbermatic system, you will have at your disposal the market's most advanced tools in information management relating to timber procurement – for the home or the office, for desktops and laptops alike. Available to you are applications for monitoring production, costs, work and repair data and machine condition; positioning, budgeting and bucking instructions.

Analysing the information accumulated by the forest machines is facilitated and decision-making becomes faster; business becomes competitive and profitable. TimberOffice is compatible with all current and old Timberjack systems but it can also handle production information accumulated in the systems of other forest machine manufacturers.

TimberOffice enables the forest machine entrepreneur to make the right decisions throughout the logistic chain of timber procurement and to control business in the same way as larger corporations.

PROPERTIES OF TIMBERMATIC AND TMC.

● Standard Function ○ Optional function

Properties, Devices and Options	Timbermatic 300	Timbermatic 700	Timbermatic 900	TMC Without Timbermatic in Forwarders and Slash Bundlers
PC-based system, with a 12.1" or 10.4" SVGA TFT monitor	●	●	●	
Timbermatic run display in graphic user interface	●	●	●	
Windows 2000 operating system	●	●	●	
TMC icon display	●	●	●	●
CD ROM	●	●	●	
CAN connections	●	●	●	
Compact Flash cards	●	●	●	
USB connections	●	●	●	
Serial ports, PS/2 and LPT connections	●	●	●	
Ethernet connection	●	●	●	
Video In connection	●	●	●	
Keyboard and touch pad	●	●	●	
Printer	●	●	●	
Electronic callipers with fixed docking station	○			
Stand and segment processing	●	●	●	
Processing of value, distribution, limit and colour marking tables	●			
File management (*.prd, *.apt, *.drf, *prl, *.stm, *.pri, *.mas...)	●	●	●	
Key settings	●	●		
Printouts	●	●	●	
Working hour monitoring WRS and shift management (StanForD)	●	●	●	
Integrated email	●	●	●	
Settings for measurements, calibration of diameter and length (new function with extensive calibration file)	●			
Feed settings	●			
Saw settings	●			
Harvester head settings	●			
Gentle log handling function	●			
Default diameter and length setting for slash bale			●	●
Species and timber type setting for slash bale			●	
Backup copying of system, stand and files	●	●	●	
Sound settings	●	●	●	
Country and language settings (15 languages)	●	●	●	●
Monitor settings	●	●	●	
Front/back camera control	●	●	●	
Settings for external applications (e.g. map programs)	●	●	●	
Start menu for external applications	●	●	●	
GPS component (WGS84 coordinates for *.stm and *.pri files)	●	●	●	
Adaptable stem and production counter display	●			
Loader scales control and weighting coefficients for types of timber		○		○ no timber types
Active Load Space (ALS)		○		○
Variable Load Space (VLS)		○		○
Front/back camera management	○	○	○	
Light log function	○			
Intelligent saw control (Flash Cut)	○			
Boom tilt function	○			
Cab levellin/rotating function	○			
Boom/cab slew funtion	○			
Fresh branch bucking function	○			
Old production function	○			
Loader quick settings	●	●	●	●
Engine and transmission settings	●	●	●	●
Cab settings	●	●	●	●
Operator selection, time and date settings	●	●	●	●
Mini lever and pedal settings	●	●	●	●
Diagnostics	●	●	●	●
Fuel consumption monitoring	●	●	●	●
Outdoor temperature display (°C/F)	●	●	●	●
Settings	●	●	●	●

TIMBERMATIC

300 700 900

NOTHING RUNS LIKE A DEERE.

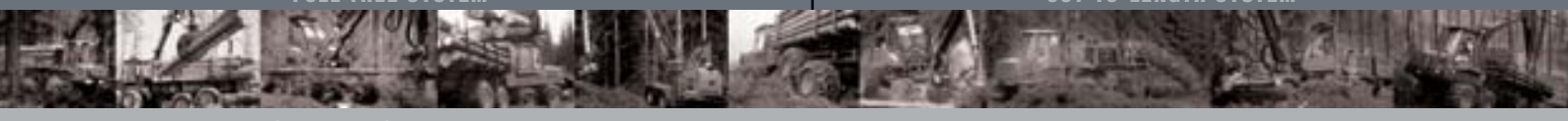
MAYBE THOSE WORDS ARE THE REASON WHY ALMOST EVERY OTHER PROFESSIONAL LOGGER IS A JOHN DEERE CUSTOMER.

They're just five simple words. Yet they have profound impact on your company. Because at their heart they mean equipment that is built forest tough, with greater productivity, more uptime and lower daily operating costs. They mean a dealer network over 380 locations strong, with immediate access to parts and experts that understand your industry. They mean a dedicated lender in John Deere Credit, committed to helping loggers succeed with competitive financing to enhance cash flow. And they mean a global forestry equipment leader that invests more in R & D than any other manufacturer.

But most of all, these words represent the confidence that comes with over 168 years of heavy equipment experience.

Your world is logging. So is ours. John Deere Forestry. Leading the way, worldwide.

FULL TREE SYSTEM | CUT-TO-LENGTH SYSTEM



PRODUCTIVITY | UPTIME | LOW DAILY OPERATING COSTS

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